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PHYSIOLOGY.

The interesting papers with which our Foreign Department is this week enriched, and the length to which this portion of our publication consequently extends, have induced us to postpone the Surgical Lectures; and also to give a week's respite to the "Hole and Corner" Surgeons of St. Thomas's Hospital.

We take this opportunity of publicly returning our acknowledgments for the polite and flattering manner in which M. MAGENDIE, during his short stay in this metropolis, presented us with his most valuable journal. *The Lancet* can afford to have Messrs. TRAVERS, GREEN, and TYRRELL, for enemies, when it can rank the first Physiologist in Europe, among its friends. Our readers will see that we have made copious extracts from the *Journal de Physiologie*, of which the last number alone contains more original and highly interesting articles than are to be found in the aggregate of the medical journals published in Europe during the same period. We feel satisfied that most of our readers will participate in our admiration of the brilliant, and at the same time logical manner in which M. MAGENDIE's physiological experiments are conducted. On the subject of hydrophobia, we beg leave to call the attention of M. MAGENDIE to the paper communicated by Dr. XANTHOS, a Greek physician, to Dr. HUFELAND, the venerable Editor of the *Journal der practischen Heilkunde*, which we translated in vol. 2. p. 300, of this publication.

M. MAGENDIE paid his visit to this country at the moment when the Surgeons of St. Thomas's Hospital had covered themselves with glory by their attack on the Press, and we have reason to believe that this distinguished physician took considerable interest in the discussion which this proceeding has called forth in *The Lancet*. The following passage in the *Journal de Physiologie* must be extremely gratifying to the "Hole and Corner" Surgeons.

"Si les médecins et les chirurgiens; au lieu de cacher avec soin les événements malheureux, les avaient publiés avec candeur, ils auraient autant servi la science qu'en proclamant les cas de réussite, Ici, comme ailleurs, le malheur est une bonne école."

We trust that when M. MAGENDIE next visits this country, which we have reason to think will be at no distant period, the profession will see the propriety of paying some public mark of respect to this distinguished Physiologist.

IS THE OLFACTORY NERVE THE ORGAN OF SMELL?

Experiments on this Question by M. Magendie.—Journal de Physiologie.

To ask whether the Olfactory nerve is the organ of smell, might at first view seem to expose the enquirer to ridicule. Who entertains a doubt on the subject? would be the answer; is it not a well established fact ever since anatomy has taught us the course of this nerve, its distribution on the olfactory surfaces, its large size in those animals which have the sense of smelling most perfect, &c. &c. I must confess that had this question been proposed a month ago, I should not have hesitated to answer in the affirmative, and that I should not have ventured to entertain a doubt respecting it: although in physiology and medicine, &c. it may not be useless to question the correctness of points which are apparently the best settled. Let those who are unwilling to doubt, believe as implicitly as they think fit. Wishing, however, this year to demonstrate in my lectures on experimental physiology, the different properties of the nervous system, I first endeavoured to shew by direct proof that the olfactory nerve was the agent of smell, an attempt which to my knowledge had not been made.

My first experiment consisted in laying bare the olfactory nerves of a dog, twelve months old. I did not expect to find them sensible to the contact of foreign bodies, nor even to punctures; the greater part of the hemispheres of the brain was insensible to these excitements; indeed, neither pressure, nor deep punctures, nor extensive laceration, were followed by any symptom which indicated sensibility of these nerves.

I was curious to see if the direct contact of a very fragrant substance would be attended with a similar result: with this view I placed a few drops of ammonia on the nerve; the animal at first did not appear to take any notice of it, but it soon gave proofs that it felt very acutely. I perceived this as soon as the liquid touched the sides of the nerve, and reached its inferior surface, and consequently the ethmoidal fossæ; I therefore believed that the ammonia had acted on the medullary part of the nerve, which, as is known, lies on the cribriform plate of the ethmoid bone,

and that superiorly the grey substance had no sensibility. Inferiorly the white matter was endowed with this property.

After having made these observations, I took the means for entirely destroying the olfactory nerves, being firmly persuaded that the power of smell would be entirely annihilated. What was my surprise to find the animal on the following day sensible to the powerful odours I put before it (ammonia, acetic acid, essential oil of lavender)! The sensibility of the interior of the nasal cavity had lost nothing of its energy; the introduction of the stilet was followed by the same result as on a dog, whose olfactory nerves were entire. This strange phenomenon recalled to my recollection a fact to which I had paid little attention the preceding year, because it was in such direct contradiction to the recognized opinions, that I attributed it, I know not why, to some fault in the experiment. I allude to a duck from which I had removed the hemispheres of the brain, and which survived eight days, presenting during this period different curious phenomena. It had among other strange things, preserved the power of distinguishing strong smells. I shewed this animal, and submitted it to these various tests in my course at that time.

To be perfectly assured of the fact, I destroyed the olfactory nerves of several other animals, and the results were exactly the same; but besides this, I made another important remark, that the sensibility which I had observed at the inferior surface of the olfactory nerve, only existed along the outer edges of the cribriform plate of the ethmoid bone, and from this I was induced to think that it might belong, not to the olfactory but to a filament of the opthalmic nerve, which passes from the orbit to the nose, by an opening in the cribriform plate

This indication led me to suspect that the branches which the fifth pair sends into the nasal fossæ, were the organs by which the power of smell is maintained, after the destruction of the nerves of the first pair. In the human subject these branches are rather numerous, although of a middling size; they are composed, first,—of the ethmoidal branch of the nasal nerve; second, of the naso-palatine of SCARPA; third, of numerous filaments

which arise from the internal surface of the spheno-palatine ganglion. Altogether they are so arranged as to be distributed to all the parts of the pituitary membrane. I was not exactly certain as to the relation of the fifth pair to the nose of a dog.—I asked M. DESMOULINS, extremely expert in such matters, to dissect with me this nerve, and we found that the ethmoidal twig is much larger than in men, and that it furnished rather a large number of small divisions in the upper part of the nasal cavity; we also found that the superior maxillary nerve is not formed by the spheno-palatine ganglia, that it sends into the inferior, lateral, and internal parts of the nose numerous filaments of a considerable size.

It was then anatomically possible that all the sensibility of the pituitary membrane depended on the divisions of the fifth pair. But anatomical conjectures on the functions of organs are of no value until they are proved by physiological experiments. I thought of cutting the nerves of the fifth pair, so that the animals might survive; but it was easier to entertain this idea than to put it in execution. In their course over the base of the brain, the nerves are connected to the cavernous sinuses and the internal carotid. Nevertheless I attempted to make a section of them on some rabbits, and I was fortunate enough to divide the nerves of several animals on both sides without producing any serious accident. I performed the same experiments on dogs, young cats, and indian pigs; I also discovered that, these nerves once thoroughly divided, all traces of the action of powerful smells disappeared. The animals which sneeze, rub their noses, and turn their heads away when made to smell ammonia, or acetic acid, remain motionless after the section of the fifth pair, or merely manifest the actions of these odours on the larynx. It appears to me that the result of this experiment, a counterpart of the preceding is, that smelling, as relates to strong odours, is performed by the branches of the fifth pair, and that the first pair of nerves does not perform this function in common with the fifth.

Here one objection presents itself; the odours, which you have employed, it will be said, are very active; they exert a chemical action on the pituitary membrane, as they do on the

conjunctiva when they come in contact with it. Might it not be possible that in destroying the sensibility of the membrane of the nose, you take from this membrane the property of recognizing, not odours, properly speaking, but the capability of receiving the impression of stimulating vapours and caustics, as that of ammonia and acetic acid? This remark is founded on the use of the vapours above mentioned, but it does not apply to the oil of lavender and Dippel. —In no case, before my experiments, had it been presumed that the irritating vapours did not act on the sense of smell.

In order to answer this objection by means of experiment, I destroyed the olfactory nerves of a spaniel, whose smell was known to be acute, and I discovered as in my preceding experiments that he readily distinguished strong smells. But I wished to be certain if he recognized the smell of meat, of cheese, and food in general.—For this purpose I enclosed several portions in paper and set them before the animal; in every instance did he undo the paper and get at the meat. I do not, however, regard this experiment as sufficient, for, at other times he appeared to me to want the power of smell to discover some meat which I put before him without his seeing me do it. In supposing this last result correct, it would not prove that the fifth pair is not the agent of smell, for the derangement produced by the destruction of the olfactory nerves, necessarily produces inflammation in the nasal cavity, and may thus, although secondarily, injure the power of smell. I then followed up this point.

I removed from some fowls, ducks, and magpies, the hemispheres of the brain, and the whole of the olfactory nerves: these animals preserved the entire sensibility of the pituitary membrane, and gave evident signs of the action of powerful odours on the smell. I cannot conceive on what grounds the contrary has been recently asserted.

In fine, I am indebted to the politeness of M. RAMON, visiting physician *de la Maison Royale de Charenton*, for a fact which appears to me to prove that it is neither indispensable in the human subject for the exercise of smell, that the hemispheres of the brain should be entire.

After several years of mad-

ness and delirium, it is very common to see persons fall into a stiff and torpid state, analogous to complete drunkenness; the legs totter, the movements are uncertain, the tongue impeded in its action: this state, which nothing has been found to relieve, is followed by a total loss of the intellectual faculties; and in a short time death takes place. On examining the body, the hemispheres are found gorged with blood, the coverings of the brain inflamed, and frequently a complete alteration in the cortical substance. In individuals who present the train of symptoms above mentioned, M. RAMON has always found a continuance of the sense of smell, not only for strong and irritating smells, but even for odours much more light and volatile.

Such are the observations which I present to physiologists concerning the olfactory nerves; they are still incomplete, and require to be followed up. I hope, at any rate, that they will be the means of inducing others to repeat them, and to neglect no opportunity of repeating, confirming, or disproving them by pathological observations. It appears from these researches that animals, such as dolphins, in whom the olfactory nerves are entirely wanting, are probably not deprived of smell, as some naturalists have imagined.

If it be confirmed that the sense of smell belongs to the fifth pair, it will remain to be determined what are the uses of the olfactory nerves and lobes. Nothing is as yet known which might enable us to determine. They would in this case be classed among those parts of the nervous system, the functions of which are entirely unknown.

On the Influence of the Fifth Pair of Nerves on Nutrition and the Functions of the Eye. By M. MAGENDIE.—*Idem.*

It has been stated in the preceding paper how I was induced to cut the nerves of the fifth pair in the cranium, so as not to cause the death of the animals. I have been also led to observe phenomena, which arise entirely out of the generally received opinions concerning the functions of the nervous system.

After having divided one of the fifth pair of nerves in a rabbit, I perceived that all sensibility on the same side of the face was lost; the interior of the nose, the surface of the conjunc

tiva, &c. were insensible to the contact of hard bodies, and even of sharp instruments. I wished to ascertain if the same defect of sensibility existed for very irritating chemical agents. I therefore applied some ammonia on the eye, and distinctly observed that it produced no impression. In order to see the difference, I lightly touched the eye of that side on which the nerve had not been divided with a little ammonia, and immediately the animal shewed by its motions, its struggles, the copious flow of tears, the closing of the eyelids, &c. the very acute sensibility of the organ. There was nothing like this on the opposite side; the eye was dry, and what is most singular, the motion of the eyelids, called winking, had ceased; the globe of the eye appeared to have lost all its movements; the iris was strongly contracted and motionless; in fine, the eye had the appearance of an artificial one, placed behind lids which were deprived of all motion. Completely puzzled by the multitude of strange phenomena which I had observed, I postponed till the next day my observations, and endeavoured to explain what I had seen. The loss of sensibility in the surface of the eye was most easy to be understood; the distribution of the branches of the opthalmic nerve to the lids, and the conjunctiva, satisfactorily accounts for this phenomenon; which had also been recently observed by Mr. MAYO on pigeons. The suspension of the secretion of tears, could also be understood by the paralysis of the lacrymal nerve; but the motionless state of the eyelids and eye, the permanent contraction of the pupil, could not be so readily referred to the facts with which we are acquainted. I was, however, suddenly arrested by the idea that probably in cutting the nervi trigemini I had included the motores oculorum.

The next day I examined the animal, and was not a little surprised to find things exactly in the same state as when I had left them; only the healthy eye, from the effect of the ammonia, was intensely inflamed; the opposite eye, on the contrary, exhibited no mark of inflammation. The section of the nerves had there prevented the developement of the inflammatory process, and this result was not less curious than the preceding. In

order carefully to study these different phenomena, I divided on this day the fifth pair on several rabbits, in some, one of the nerves only, in others, both, and at the same time. It was by observing these animals on the following days, that I discovered the facts which I am going to relate—facts which will undoubtedly excite the interest of physiologists.

A. Twenty-four hours after the division of the nerve, the cornea began to be opaque; in seventy-two hours the opacity considerably increased, and in five days from the time of the experiment it was of the whiteness of alabaster.

B. From the second day, the conjunctiva became red, appeared inflamed, and secreted a considerable quantity of puriform matter, somewhat resembling milk; the eye-lids were either separated to a considerable distance from each other, and motionless, or were glued together by the puriform discharge which had dried on their edges, and when they were opened a good deal of matter escaped.

C. About the second day after the division of the nerve, the iris also became inflamed, and its vessels developed themselves. On its anterior surface were formed some false membranes, which had, like the iris, the shape of a circular body, perforated in the centre. These membranes at last filled the anterior chamber of the eye, and contributed to give the cornea an opaque appearance. Is it not an extraordinary phenomenon that an inflammation should exist with suppuration and complete insensibility of the inflamed part, and which is caused by the section of a nerve? Before proceeding any farther, I will just remark that the sudden opacity of the cornea appeared to me at first to depend on the long exposure to the air. To be certain of this, I divided in a rabbit the seventh pair of nerves, which, according to the observation of Mr. Charles Bell, directs the motion of winking; but although the eye in this animal remained in constant contact for several days with the air, no opacity shewed itself on the cornea, nor any inflammation, either on the conjunctiva or the iris.

I then suspected that the opacity depended on the non-secretion of the tears. It is possible, I said, that a membrane, like the cornea, may require to be kept constantly moist by a clear

fluid, to preserve its transparency. In order to ascertain if my conjecture had any foundation, I performed an entire extraction of the lachrymal gland on two rabbits, but no opacity manifested itself on the cornea during eight days after the experiment. There was no foundation then for the conjecture. Opacity of the cornea, inflammation, and suppuration of the conjunctiva, and iritis, are dependent on nervous influence.

D. Towards the eighth day after the division of the fifth pair, a visible change takes place in the cornea; it begins to be detatched from the sclerotic at its circumference, and ulceration in the centre follows; at the end of three or four days more, the humours of the eye, turbid, and partially opaque, make their escape, and the eye becomes reduced to a small tubercle occupying only a very small part of the orbit, a circumstance which gives to the animals somewhat of a terrific appearance. If the eye is dissected at this period, it will be found only to contain a matter which resembles cheese just hardened, and the retina nearly destroyed; only a few traces of it here and there are to be seen

E. The sight appears to be, if not entirely destroyed, at least considerably weakened; and if, a few hours after the section of the nerve, a needle is introduced to the surface of the retina, the animal shews no sign of feeling. *

As soon as both nerves are divided on an animal, it appears blind, and moves about in a most singular manner: it walks with the chin firmly resting on the ground, making use of its head for a guide, just as a blind person uses a stick.

The step of an animal in this state differs altogether from an animal simply deprived of sight: when merely blind, it guides itself by means of its whiskers and the sensibility of the skin of the face; and is aware of any obstacle that may be in the road, in fine, it would be difficult to know whether the creature were

* A false idea is generally entertained respecting the sensibility of the retina; it is represented as the prototype of sensible organs. It is affected even by the very light, it is said! If a hard body should happen to touch it, most acute pain would immediately follow. Experience does not give this result; a needle carried against the retina only produces a feeble sensation; friction and rupture of the membrane merely excite a moderate pain, and which cannot be compared to that produced by puncturing the eye. I have observed this circumstance on the human subject in performing the operation of cataract by depression.

blind or not: whilst animals which have had the fifth pair of nerves divided, move in one manner only, and instead of avoiding all impediments, often obstinately push against them for several hours, so as to rub off the skin from the front part of the head.

F. The tongue is insensible on the side where the nerve has been divided, and if a section be made of both nerves, the insensibility is general. In this case the tongue hangs out of the mouth, but the animal is able to draw it in towards the pharynx.—Bitter substances produce no apparent effect on the anterior part of the organ, but they evidently act on the centre and base. In dogs and cats the lower jaw hangs after the division of the fifth pair, which impedes deglutition, and sometimes prevents it altogether. They walk in the same manner as rabbits; but instead of resting on the chin, they frequently rest on the tongue which owing to the depression of the lower jaw is lowest, and therefore rubs against the ground in the act of progression.

G. When one nerve only is divided, a change manifests itself in the nostrils, mouth, and the tongue on one side; half of the tongue becomes white, its skin thickens, the gums shrink, and leave the teeth bare, the food getting between them.

H. I think that I have observed the hearing destroyed by the division of the fifth pair; this would be the less extraordinary, as in several animals, the acoustic nerve is evidently only a branch of the trifacial. If this last result is correct, all the senses would then be under the influence of the fifth pair, and thus the general theory of sensation ought to be changed.

[M. MAGENDIE will continue this subject in the next number of his valuable Journal.—EDIT. of L.]

Trial of the Injection of Warm Water into the Veins, in a Case of Hydrophobia, by B. GASPARD, Doctor of Medicine at St. Etienne (Loire.)

In November and December 1823, a great number of wolves infested the north of the district formerly called Bresse Châlonnaise; they were regarded by some as wolves from the Pyrennees, which had followed the army on its return from Spain; by others as wolves of the mountains of Franche-Comté, or of

Lorraine, from whence the first falls of snow had driven them; others supposed them to be wolves which had escaped from a menagerie. Many persons, who have had a near view of these animals, state that they found them smaller, thinner, weaker, with a sharper muzzle, and hair more shaded than is observed in the common wolf. However this may be, they were distinguished by extraordinary fierceness and audacity, attacking men in the day-time, continually prowling about houses, into which they endeavoured to effect an entry. They seemed to have lost their natural instinct in providing for their nourishment, they attacked the shepherd of a flock rather than the sheep, and one of my colleagues having opened one, which had been killed, found nothing but a few weeds and some earth in the stomach.

In the beginning of last December, a farmer, named J. L. Guillemin, hearing his yard-dog bark very loudly, went out with a pick-axe in his hand, and saw his dog fighting with a wolf. While he was aiming a blow at the wolf, that animal, quitting the dog, sprung fiercely upon his master, and seized his right hand, which he would probably have bitten through, if the palm had not been protected by the agricultural instrument. The back of the hand was much injured, being deeply lacerated in the inter-osseous spaces; and the furious animal would no doubt have inflicted more serious wounds, if the dog had not compelled him to let go his hold, and renewing the combat, dragged him several times to the ground. The wolf then entered the house, the door of which was open, and after exciting great alarm, rushed out of it, and effected his escape. At a short distance from the house he bit a young man in the thigh.

As this wolf was not suspected to be mad, Guillemin's wound was simply dressed, without having been cauterised, and it very soon healed. This man returned to his ordinary pursuits, exhibiting, however, so much fear at the approach of night, that he scarcely ventured to go out of the house. Five weeks after the wound had been inflicted, on the 14th of January, 1824, he complained of pains in the nape of the neck and shoulders, and he had slight fever, with shivering.

Nevertheless he went the next day to a neighbour's house, to kill and cut up a pig; but while he was engaged in this occupation, he felt an unusual trembling in his hands, of the motions of which he had not a perfect command; he drank, however, a bottle of wine with the master of the house. On his return home he was seized with sickness and fever, went to bed, and swallowed a little brandy in the evening; in the middle of the night, having called for some water to drink, he was seized with the horror which marks an attack of hydrophobia, on bringing the vessel to his mouth, and found it impossible to overcome his repugnance. On the 16th of January the symptoms were continued, dread of water, sensibility greatly increased, trembling of the limbs, great thirst, urine scanty, and thick, continued fever, copious sweats; he swallowed solids, however, as easily as when in health; from time to time he fell into a slight dose, from which he jumped up in a state of horror, imagining that he was surrounded by voracious wolves. On the morning of the 17th, the symptoms continued the same. I was called to him in the middle of the day by my excellent friend and colleague, Dr. PETIOT, and I found him with the symptoms characteristic of hydrophobia without mania, and even without delirium, as I had seen two individuals affected with it in 1806, and 1811, at the Hotel Dieu at Paris. The patient reasoned very well, but while he affected confidence, he was in reality much alarmed; his countenance was somewhat wild, his eyes distended and sparkling; pulse small, feverish, and very quick; skin clammy, no appetite; tongue white, and moist; pharynx not at all inflamed; deglutition of bread, meat, and fruit very easy; burning thirst; great desire for drink, but impossibility to satisfy it, notwithstanding the most strenuous efforts perseveringly continued. As soon as a vessel containing liquid approached the patient's mouth, he was seized with a painful contraction of the pharynx, and especially the upper half of the œsophagus, or perhaps even of the glottis, with spontaneous constriction of the chest; sobs, convulsive motions of the face, trembling of the limbs, and other nervous symptoms. The horror of the patient was the same, whether

milk, wine, or water, were offered to him; whether the liquid were presented in a glass, or through a tube, in whatever way it was attempted to be introduced into the mouth, and whether his eyes were open or shut. I made an attempt with a piece of ice, which the patient put into his mouth without repugnance, and letting it melt there, he swallowed the liquid without difficulty; but the swallowing of a second piece brought on a convulsive paroxysm of hydrophobia. A fit would sometimes be brought on by the mere noise of the water poured from one pot into another, by a slight influx of air, by the shaking of the bed-curtains, by the slightest unexpected contact of his body with any substance, &c. His sight, however, was not affected by the light of the sun, or the fire.

It appeared evident to us that this individual was affected with true hydrophobia; the spitting of frothy mucus had not yet indeed taken place, but it soon appeared, as I shall shortly state. Some persons have imagined that this man was not affected with hydrophobia in consequence of the bite he received, but in consequence of the great alarm which he experienced. It has been alleged in proof of this that the dog, which fought with the wolf, and the young man who was bitten in the thigh after the patient, had not contracted hydrophobia, which is true up to this time, (Feb. 2, 1824) it has been said also that many other persons were bitten by wolves of the same kind, about the same time, and have not been affected with hydrophobia; which is true to a certain extent, but not strictly so. When I reflect, however, that in cases of hydrophobia caused by fear, the malady has appeared at the moment of some violent emotion of the mind, or very shortly afterwards; while in this case the disease followed very exactly the ordinary course of hydrophobia, communicated by a bite; when I consider also the cases which have been well ascertained and reported by authors of great weight (Messrs DEGNER, SALGUES, PORTAL, &c.) of hydrophobia being produced by the bite of animals, or even of men, who have been merely irritated or enraged, and who have not been themselves affected with hydrophobia; when I reflect, moreover, that the patient was far from being a

pusillanimous man, that he betrayed no extraordinary, nor sudden fear, that the sight of his dog at the time of the accident was calculated to re-assure him, &c.: all these considerations convinced me that hydrophobia had manifested itself in him in consequence of the bite, and not from the effects of fear.

However this may be, we considered that, in leaving him to himself, his fate was certain; and that, in attempting to cure him, such means must be resorted to as might advance the progress of medicine. I communicated to M. FETIOT the two experiments made by M. MAGENDIE on a man and on a dog, and he agreed with me that this was a proper case to ascertain the efficacy of water injected into the veins as a remedy for hydrophobia. We proposed, therefore, this means to the patient, as calculated to assuage the thirst with which he was afflicted, and he readily consented to it. Having laid bare the cephalic vein of the right arm, I injected at first very slowly about four ounces of warm water, asking the patient every moment if he felt any extraordinary sensations, such as palpitation of the heart, difficulty of breathing, fainting, &c; he assured me constantly that he felt nothing unusual; it was not till the injection was concluded that he spoke to me of certain prickings, or a kind of tickling sensation throughout the interior of the stomach, although the pulse had not in the mean time undergone any change in its frequency or fulness. Uneasy, however, as to the consequences of this new symptom, I suspended the experiment, and waited to see if any serious effect should manifest itself; but at the end of a quarter of an hour, no change having taken place, I injected again with the same slowness, and the same precaution, four more ounces of warm water. The uneasiness, or rather the tickling sensation, of the lungs did not increase, but continued the same; the motion of the heart was not augmented; the pulse only became a little fuller, but the patient's thirst did not at all diminish, nor his nervous and hydrophobic symptoms.—Fearing, nevertheless, that the lungs would be gorged, I suspended the experiment, to observe the consequences of those pulmonary prickings which did not cease; and I had soon reason to be glad of having done so, for at the end of another quarter of an hour the patient complained of vertigo, and a desire to vomit; he coughed three or four times without expectoration; and at length, forty-five minutes after the first injection, he was seized with a violent shivering, and trembling of the limbs, attended with a very small and frequent pulse, paleness and coldness of the body, exactly as in a paroxysm of tertian or quartan ague.—This shivering lasted more than half an hour, was followed, as usual, by a dry heat, with fulness of the pulse, and at last by copious sweating: the three periods of this attack lasted about an hour and a half. The symptoms of hydrophobia still continued, without any altera-

tion; the same dread of water, the same thirst, the same excess of sensibility, and the same convulsive paroxysms.

It may be easily conceived that I did not think of injecting any more water into the veins: for I had already too far compromised my medical reputation in the eyes of persons incapable of appreciating my conduct; especially, as the confidence placed in one who holds no *public* situation must, under such circumstances, depend on his success. Again, the complicated condition of the patient at the time of this long rigor, and violent febrile shivering, was calculated to create alarm, and I should have been myself alarmed at it, if I had not recollected the three experiments made on a man in 1770 by J. M. Regnaudot, in which the injection of various liquids into the veins produced uniformly at the end of half an hour, a complete paroxysm of fever, consisting of the three stages of shivering, heat, and sweating.*

I left the patient to his unhappy fate, merely making him swallow some grains of opium. In the night, eight hours after the experiment, he had a second paroxysm of fever, attended with the same symptoms as the first; afterwards he had a slight delirium, accompanied with trembling of the tongue and legs; shortly after he brought up repeatedly a great deal of frothy mucus; soon after the appearance of this spitting, his dread of water ceased, and he drank twice a glassful of barley water without any difficulty or effort.†

Nevertheless, though the repugnance to liquids had ceased, the trembling of the limbs still continued, especially in the arm which conveyed the vessel to the mouth; convulsive symptoms afterwards appeared; the

* These experiments made at Guadaloupe on a young man from 18 to 20 years of age, affected with the red eruptions which precede leprosy, are detailed in a work entitled Dissertatio inauguralis de chirurgia infusoria renovanda, Lugduni Batav. 1778. This dissertation, for the communication of which I am indebted to M. Agron, being somewhat scarce, it may be useful to give in this place the substance of the four experiments.

1. On the 27th of January, half a tablespoonful of a light infusion of senna, injected into the median vein of the arm, produced only a short and slight head-ache.

2. The next day the injection of one ounce of the same liquid produced at the end of half an hour a violent fit of shivering, followed by heat, vomiting, and several alvine evacuations; the paroxysm of fever lasted nearly eight hours.

3. On the 29th January, three ounces of an infusion of two drachms of the bark of guaiacum, with 48 grains of isinglass, injected in the same manner, produced, as on the former evening, at the end of half an hour, a very long fit of shivering, followed by pains in the intestines and two stools; the fever lasted more than nine hours and terminated with copious sweating.

4. On the 30th January this physician injected into the vein of the same man three ounces of warm water, holding in solution two drachms of gumarabic.—About an hour after, the usual febrile shivering appeared, with a small and frequent pulse; there were three alvine evacuations; heat succeeded the shivering, and the paroxysm of fever terminated with copious sweating 15 hours after the injection.

† This favourable result did not depend I believe on the injection of water into the veins, for it has been observed in many other cases of hydrophobia, and very recently in some of those published by M. Trolliet.

delirium became violent; the patient threatened the by-standers with his fist, rolled himself up in the curtains, hid himself under the blankets, &c. At length on the 18th of January, at 6 o'clock in the morning, he caused himself to be taken out of bed and placed in his arm-chair; being in a state of great exhaustion, his limbs cold, his pulse scarcely to be felt, his face somewhat agitated with spasms, his mouth filled with saliva, or rather with frothy mucus, which perpetually flowed from it; he then leant upon the arms of the chair, and died very tranquilly in a few minutes, his death not being immediately observed, 54 hours after the first appearance of his dread of water. The body was not opened.

I shall leave the reader to draw what conclusion he pleases from this experiment, with regard to the treatment of hydrophobia, the cause of the paroxysms of fever, with shiverings, &c.; I will content myself with adding that in some experiments I have introduced without danger in the course of a few hours as many as 13 ounces of water, or other innocent liquid into the veins of dogs of a middle size, which have experienced nothing but a slight momentary cough from it. It would seem, therefore, that the results of this experiment are not the same on man and on animals.

Remarks on the above Case by M. Magendie.

The case which M. GASPARD has above detailed, appears to me to be one of extreme interest. We must not judge by the event; success is not obtained at the first attempt. If physicians and surgeons instead of studiously concealing unfortunate cases, had published them with candour, they would have done as much service to the science as in proclaiming their successful cases. In our profession, as well as elsewhere, misfortune is a good school.

Nevertheless, M. GASPARD not having bled his patient, and not having introduced more than eight ounces of water into the veins, could not obtain any sensible effect from the new mode of treament; it may even be presumed that if the dose of liquid injected had been sixteen ounces, it would not have produced a greater effect. I made last month an experiment on a mad dog, which leads me to consider this as probable.

A butcher in my neighbourhood came to inform me that his dog, a black poodle, extremely gentle in his ordinary disposition, had become savage, and bitten several persons. I had the dog secured, and examined him. I recognized immediately the existence of Hydrophobia, which was in its highest degree of intensity; the dog bit fiercely every thing presented to him; he foamed at the mouth, his eye was haggard, his bark hoarse and short, &c.

I wished to ascertain the dose of water necessary to produce a sensible effect, without exceeding it; accordingly, after having taken away eight ounces of blood, I injected an equal quantity at a temperature of 40°. I caused the animal to be untied,

but the disease had lost nothing of its activity, and it terminated in death, the following night, as it would have done without the injection. Now, if the introduction of eight ounces of water into the veins, after eight ounces of blood had been taken away, produced no effect on a dog of moderate size, *a fortiori*, a similar injection into the veins of a robust man without previous bleeding would produce no effect.

The patient at the Hotel Dieu, the history of whose case I published, was in a very different situation; he had been bled copiously before his admission into the hospital, and on the morning of the day, when his veins were injected, he had been bled at the hospital, till he fainted. It was under these circumstances that I introduced nearly sixteen ounces of water, and obtained almost immediately the effects, which I detailed in the history of that case.

If therefore an opportunity occurs of trying again the injection of water into the veins, it it will be necessary to take the precaution of bleeding the patient freely several times before introducing the water into the circulation.

ON SPERMATIC ANIMALCULÆ, BY M. BORY DE ST. VINCENT.

Although the distinction of a class of animals under the name of *infusional* may appear improper, we must nevertheless admit, either under that name, or that of microscopic, a large division of animated beings, essentially destitute of a nervous system; and which the minuteness of their proportions conceals from our view. Among these beings, many live in infusions, or develope themselves exclusively in them; others swim in the purest water, or inhabit, as well as the intestinal organs of more complicated and important animals. The beings for which I have suggested the name of Zoosperms in the third volume of the *Dictionnaire Classique d'Histoire Naturelle*, p, 356, printed about a year ago, are of this number. They form part of the family of *cercariæ*, established in the same work.

The *cercariæ* belong systematically to the second order of infusional or misroscopical beings, which is composed of species furnished simply with tails.—These species have in their tail a sort of locomotive organ, which may be considered as the first rudiment of members, but I have never distinguished, with the strongest glasses I could employ, any external indications of sight or hearing, or any natatory apparatus which could facilitate motion; nothing which could induce us to suspect the existence of any system, whether of respiration, circulation, digestion, or sensation; there can be no doubt, however, that the *cercariæ* do perceive impressions, and that they nourish themselves.

The characteristics common to all the *cercariæ* consist in a globulous body, perfectly distinct, terminated by a tail posteriorly, simple, and essentially *inarticulated*. It is important to distinguish this last feature, in

order to put circumspect observers on their guard against the ideas of incautious observers, who, exaggerating the functions which these spermatic animalculæ perform in the process of generation, may be tempted to find articulations in a tail, which might then be made the embryo of a vertebral column, while the globulous part might be considered the elementary part of a larger animal. I will not stop to consider the various genera which I have established in this family, which amount to six.—Two only need here occupy our attention. The first, the type of the family, is the *cercaria* of Muller, and of all his followers. Its characters are *a body not capable of contraction, cylindrical, obtuse anteriorly, tapering posteriorly, and terminating in a tail flexible in swimming, equal to the length of the body, or rarely longer.* The *cercariæ* properly so called, are perfectly transparent and colourless; they inhabit either infusions, or fresh water. Muller had, by analogy, given the name of *gyrinus*, to the most common species which is found among marsh weeds, because this species resembles a small tadpole both in form and motion. Disregarding what had been written on the subject of spermatic animalculæ by Lewenhock and his other predecessors, he referred the descriptions and figures given by these writings to his infusional animals. This fault has led succeeding naturalists into error; they have concluded that the observers who spoke of spermatic animals had only found *cercariæ* in corrupted semen.—This error, arising from want of observation, is the greater, inasmuch as all life, and even all susceptibility to the developement of life ceases in putrified semen, while all semen is inhabited by myriads of animals, so long as it continues fresh.

The second kind to which it is important to direct our attention is that to which I have given in the work above cited, and in the *Encyclopedie Methodique* the name of *zoosperma*. Its characters are *a body not capable of contraction, oval, much compressed, with a tail like a bristle, as long or much longer than the body.* In other respects it resembles the *cercariæ*, having the same general aspect, the same motion, the same transparency without the least colour; but the tail is infinitely longer, planted on the body, and the compression of this body establishes the principal difference. This compression is such that when the *zoospermæ* turn on their side, they appear completely lineal, which is never the case with true *cercariæ*. It is astonishing that this great difference should have escaped the observation of those whose attention has been especially directed to spermatic animalculæ; they have distinguished, indeed some species, as compressed, but they have not seen in this compression a character of the first importance, and the only one which really separates, with respect to form, the inhabitants of semen from the other cercariæ, which could not be distinguished systematically without this peculiarity.

The *zoospermæ* inhabit with-

out exception the seed of animals of all classes. It is in the epididymes that they are exclusively found, and only in animals in a state of puberty and fecundity This fact has been already observed by the exact Gleichen; I have ascertained, it for more than ten years past, by repeated experiments. To conclude that the zoospermæ are the necessary cause of fecundity, and that they are secreted by the testicles, would not be sound logic. Hydatids, teniæ, &c. are not secreted by the viscera which serve for their residence; they find a suitable nourishment there, and a *habitat* appropriated to their organization; that is all.

All that is is necessary to obtain a good view of the *zoospermæ*, is to take a testicle either from a living animal, or one that is just dead, or at least before decomposition has taken place, and having made a slight puncture in it, place on the object-stand of a good microscope a portion of the drop of liquid which will escape from it. The *zoospermæ* will be there in such abundance that they will scarcely be able to move individually, and it will be difficult at first to distinguish them amidst the general agitation. But if this fresh semen be steeped in pure water at the temperature, or nearly at the temperature of the testicle, the animalculæ will be isolated, and we shall then readily see them with a simple lens, a line in thickness; they will appear like a small grain of rice, and their resemblance to tadpoles will strike the observer with astonishment. If we employed water at a lower temperature, the new sensation felt by the *zoospermæ* would make them roll into globules, and become motionless. Acidulated water would kill them immediately.

It has been said, that the *zoospermæ* can live only a few minutes on the object-stand of the microscope; this is a mistake; in general they live but a short time there, because the evaporation changing the nature of the liquid by thickening it, they cannot move in the mass; but if we keep semen, which has been either ejaculated, or taken from a lacerated testicle, plunged in a glass of water at the temperature of the animal, and afterwards, without attending to the gradual cooling, taking care only to prevent putrefaction, which can be done for a considerable length of time, the *zoospermæ* will live. I have in this way kept them in small vessels for eight or ten days; and this experiment has succeeded, not only with the *zoospermæ* of frogs, but with those of mammiferous animals, and of man. The moment the preserved semen acquires the least smell, which is not peculiar to it, indicating the first degree of decomposition, the *zoospermæ* die irretrievably.

The *Zoospermæ* pass into the vesiculæ seminales, but they do not constitute semen; inhabiting the testicles, they are drawn from them by the fluid, which those organs secrete, as certain intestinal animals are drawn by different causes from the viscera which contain them. Perhaps their rapid motions may produce the mixture of different sub-

stances which compose semen capable of fecundating; this is the function which we may suppose them to perform in the animal economy. If these motions are wanting, the mixture may not take place, and the semen consequently remain imperfect. To suppose that it is the animalcule which fecundates, is an idea hazarded, or revived by Buffon, which is by no means conclusive.

I have calculated that in the semen of a strong and healthy man, a thousand *zoospermæ*, excessively pressed against each other, occupy the space of a square millimetre (half a line). The size of *zoospermæ* is not proportional to that of the animals, which nourish them. That of man is nearly of the same size as that of the cock, and only twice as large as that of the silkworm. The bull's are somewhat larger than ours; those of the horse are somewhat less than those of the male ass, and yet the horse and the ass impregnate the same female, which would not happen if it was the animalcule which impregnated. The same thing would happen in this case which takes place with respect to globules of blood, on which I have remarked, as M. Dumas has also judiciously done, that an animal will live if you inject into its veins globules of blood of equal bulk, whereas he dies in convulsions if you employ for the injection globules of blood of a different bulk from its own. In general, the size of the *zoospermæ* is in the inverse ratio of the size of the animal; the smallest animals have *zoospermæ* proportionably larger, but many of them fewer in number. Reptiles produce the most considerable; those of fish have the longest tails, though it is more difficult to perceive them. I shall shortly publish an engraving in which about 50 species of cercariæ will be carefully represented and described.—*Journal de Physiologie,*

DEFECT OF ORGANIZATION IN THE EXTERNAL EAR.

By M. Bernard, House Surgeon at the Hospital des Enfans.

A child, named Alexandre Trippet, aged eight years was admitted into the Hospital in the month of September, 1822, for a slight complaint of the bowels. A few days after its admission, we perceived behind the ears, in front of the mastoid processes, a deep funnel-like cavity, the bottom of which was directed upwards and inwards, and by which the patient heard whether the natural opening was closed or not; a stilet introduced into this accidental cavity, penetrated to the depth of several lines.

The cartilaginous portion of the ear had undergone no alteration, only the opening of the meatus auditorius externus was thrown forward, and was narrower than common. The patient's hearing was hard, and he answered only in monosyllables.

The child was on the point of quitting the hospital, when he was attacked by a malignant Angina, which carried him off in a few days. On a careful ex-

amination of the two ears, we discovered the following appearances.

The accidental opening, concealed entirely by the cartilaginous portion of the ear was enlarged, and terminated in the bottom of the meatus auditorius externus, the cartilage of which was interrupted in this place, as we shall presently observe.

There existed no membrane of the tympanum, or small bones of the ear; a very thin mucous membrane lined the cavity of the tympanum, and the two meatus, and was blended exteriorly with the skin; the length of the accidental meatus was from about four to five lines, that of the right side was closed by thick crusts, which could never be extracted during the child's life.

The meatus auditorius externus, slightly contracted, was from five to six lines in length; it was bent anteriorly; the posterior part of its cartilage, interrupted by the internal orifice of the accidental meatus, was attached on one side to the base of the zygomatic process, and on the other to the summit of the mastoidean eminence. This eminence was hollowed at its base to form the posterior paries of the accidental meatus; the mastoidean cells were only covered by a fine lamina of compact substance. The internal parietes of the cavity of the tympanum, and the openings communicating with the labyrinth were observed at the bottom of the meatus auditorius externus.—*Idem.*

Taliacotian Operation for a New Nose.—From the Gazette de Santé, June 15.

One of the most horrible deformities is undoubtedly that which results from the loss of the nose, and that operation may be regarded as a great triumph of surgery, by which we are enabled to make, if not a perfect, at least a supportable nose by taking a portion of skin sufficient for this purpose from the forehead of the patient. This operation, which has recently been called the *rhinoplastic*, has been successfully performed by Professor DELPECH. The patient who was the subject of it had lost his nose from the effects of syphilitic ulcers; after a long course of treatment, the operation was performed on the 4th of June, 1823. In the month of August following, the cicatrix was perfect, and the patient returned to Toulon, his country, where he became an object of general astonishment, so happily was nature imitated by his artificial nose.

We learn from an English Medical Journal, that Mr. Travers, a Surgeon of St. Thomas's Hospital, recently performed the same operation, but not with the same success, half of the skin detached from the patient's forehead having mortified.

Necrology.

The faculty of medicine at Montpellier, has just sustained an irreparable loss in respect to the instruction of the numerous pupils of that distinguished school. All those who have had the good fortune to hear the bril-

lliant and solid surgical lectures of M. FAGES, will learn with deep regret the death of that professor, which took place on the 4th of this month, at an age when it might have been expected that he had still a long career of honour before him. Other professors may perhaps enjoy a more extensive reputation, but the memory of Professor FAGES will remain indelibly impressed in the hearts of those who have been his pupils.—*Gazette de Santé*.

PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM,

BY A. L. J. BAYLE.*

In the midst of the great questions which divide at present the majority of physicians, the nervous system, its functions and diseases, hold the first rank. But the physiology of this great apparatus of the animal economy being enclosed in much deeper obscurity even than its pathology, has in a particular manner attracted the attention of authors. It has been proposed to determine the respective uses, of each of the numerous parts which enter into its composition. In France and several neighbouring nations, medical men have taken the same object for their researches; analogies drawn from anatomy, and physiology, experiments on animals, pathological observations, nothing has been left untried to lead to the solution of the numerous difficulties, which this subject presents. At present the results of many of these labours are known, and numerous theories have been published; but it must be owned, that all these theories founded apparently, on the most exact experiments, and strict observations, are more or less contradictory, and opposed to each other, so that after having reflected on them, one arrives at a complete scepticism on the major part of the questions discussed.

In this state of things, physicians, far from being discouraged ought to direct their attention to the nervous system with a new ardour, and make known all the facts which may tend to confirm, modify, or destroy, the opinions put forth respecting its functions. It is with this view that we publish the following facts:—

CASE I.

Cancer and Softening of the Spinal Marrow.

*Fifty-two years of age; at the commencement lancinating pains in the abdomen and chest, afterwards in the pelvis and inferior extremities; sometime after inability of walking and convulsive affections of the lower limbs; insensibility, immobility and flexion with rigidity of these extremities, which are the seat of shooting pains. At the base of the tenth dorsal vertebra, is a tumour, in form like the brain, situated posterior to the marrow which is entirely softened in that part.**

THERESA MORIN, in the habit of doing needle-work, fifty-two years of age, and who had enjoyed good general health till 1819, when she began to feel lancinating pains in the abdomen and chest. She attributed these to the sup-

* REVUE MEDICALE

* Drawn up under the inspection of M. HONORE, physician to the *Hospital Necker*, by Dr. COLLIN, and communicated to the ROYAL ACADEMY OF MEDICINE.

pression of the menstrual discharge, because she had often experienced a momentary relief by the application of leeches to the vulva. At the end of a few months these pains left the thorax and abdomen, and manifested themselves with much more violence than before in the pelvis, and lower extremities: but particularly on the left side. The inferior extremities became from that period, the seat of the most varied phenomena; they were at one time cold, at another time stiff and burning, frequently the seat of an intolerable itching which was exceedingly painful; they were either completely motionless, or agitated with convulsive movements; still possessing sufficient strength to support the weight of the body, they could not perform any progressive motion. At last, towards the end of January, 1821, the limbs began to waste, and entirely lost both motion and sensation. All the phenomena related above, were not constant, and did not present exactly the same appearances on their return. The patient sometimes passed several days without experiencing anything but an itching, and darting pains, which commencing from the pelvis appeared to follow the course of the nerves.

The patient had not left her bed, for four months prior to her admission into the hospital (NECKER). At that time the lower extremities were quite stiff and could not be bent without producing considerable pain. They were insensible to all external irritation, but always the seat of acute pains. Notwithstanding the stiffness of the limbs, the skin was soft and flaccid. The vertebral column presented no irregularity, and the patient felt no pain in any part of the spine. The general health appeared pretty good.

All these symptoms continued without presenting any change till the month of January 1823, at which period the legs began to be bent on the thighs, and the thighs on the pelvis; so much so, that the flexion was carried to such a point, that the heels were bent against the nates, and the legs raised to the chest; the forced extention of the limbs, became as painful as the flexion had been; and as soon as they were stretched out, they quickly returned to their former position. The patient continued in this state till her death, which took place on the 6th of October, 1823, after a long suffering.

During the continuance of this long and severe illness, the patient had, in the month of October 1822, a pleurisy of which she was cured. Two months before her death, several articulations of the left carpus and metacarpus and that of the right knee became inflamed, and the first suppurated for six weeks previous to her dissolution. For sometime the strychnine was employed which lessened the convulsive motions, and appeared to give a momentary relief to her sufferings. The acetate of morphine was also administered in the dose, of a grain, without success.

Examination of the body after death.

Lungs excavated, and filled with tubercles.* Left lung adhered throughout to the pleura costalis of the side attacked with the inflammation.

The articulations above-mentioned, contained a purulent liquid; their cartilages were irregular, and appeared destroyed in certain points.

The brain was sound; the cerebellum in a good state excepting that on each lobe, posteriorly, there was a small band, from an inch and a half to two inches long, of a white, firm, hard substance, composed of decussated fibres and which adhered very intimately to each other.

The spinal marrow was healthy as far as the level of the tenth dorsal vertebra, where there was found on its posterior part a tumour contained between two small folds of the arachnoid. This oblong tumour, about two inches in length, and placed lengthways in the spinal canal was slightly furrowed on its surface, of rather a firm consistence, a reddish white colour, intersected by small vessels which penetrated into its interior. When cut, it appeared composed of a homogeneous matter somewhat resembling the substance of the brain, but more firm, of a light rose colour, and presenting when torn, small but very distinct granulations. There were numerous minute vessels going in every direction; the tumour did not adhere in any point to the spinal marrow, which in every part corresponding to it, was softened to the consistence of thick paste, to the extent of about two inches, and which towards the most bulky part of the tumour, appeared cut transversely, so that the two portions separated by a small space representing

* This affection had not been suspected.

two cones resting against each other by their tops. After a very attentive examination of the softened portion of the marrow, no single fibre could be discovered, which had not undergone this alteration.

The limbs were wasted; the nerves did not appear diminished in size.*

It appears proved by this, and four other cases on record, that limbs, the nerves of which have lost all connexion with the brain, by the spinal marrow being disorganized through its thickness, may preserve to a greater or less degree, and under certain circumstances, sensation and motion, or one only of these powers. Thus the general opinion of the brain being the exclusive seat of these functions falls to the ground.

(Next week we will give two cases of cancer, one of the cerebrum the other of the cerebellum.)

HOSPITAL REPORTS.

GUY'S HOSPITAL.

The continuation of the case of F. P. in Luke's Ward.

June 23.—Since the introduction of the full-sized catheter he has been very uneasy; there is a slight oozing into the cellular structure from the wound in the perinæum; this was not much noticed by the dresser, and on the following day the scrotum was distended to near half the size, when the extravasation first took place, and it had spread into the integuments of the penis, which was swollen to twice its natural size, although the bladder was emptied three or four times in the day.

25th.—The swelling is not diminished, nor does it appear to be increased, the man is in much pain and the greatest part of the urine passes by the wound in the perinæum. A cold lotion was ordered to be laid over the swollen parts.

26th.—The man is very restless; gets no sleep at night;—tongue furred, but still white; he complains of much pain. The catheter was withdrawn to day, and the urine allowed to escape by the wound, as the catheter does not answer the purpose intended, and it is thought better to let the sore in perinæo become fistulous, until the extravasation is entirely got rid of. The swelling is rather diminished to day.

27th.—Has again had a bad night; looks very dejected, his countenance is very pale, pulse about ninety. The swelling of the penis rather diminished, but still gives him great pain. He continues to apply the wash and takes his former medicines.

28th.—Last evening he had an addition of opium ordered, and had in consequence a more tranquil night; but his sleep has not been refreshing; his tongue thickly furred, but white. His voice is very much altered and there is evidently a great change for the worse within the last two or three days. He has the appearance of a man labouring un-

* M. Bayle mentions four other cases establishing the same point as this does. The first is to be found in the *Journal de Chirurgie de Desault*, tom. iv. page 137; and the remaining three are related in M. Ollivier's work on Diseases of the Spinal Marrow.

der extensive visceral disease.—The urine is received on a sponge, but there is still a quantity of pus discharged now and then from the wound. When we have noticed him voiding his urine, it has appeared very turbid. The lower part of the perinæum is a little excoriated. He continues his former medicine with an addition of opium and is on the middle diet.

29th.—He slept better last night than he has for some time, the swelling of the penis is much diminished; his pulse is eighty and soft, his tongue is moist;—he complains of being very weak, fomentations of poppy are applied to the parts and afterwards a poultice.

To be continued in our next.

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I. H. aged fifty, was brought into the accident ward on the 25th of June with a large wound in the throat; the account the persons gave who accompanied him was, that they found him in a field between Brixton and Norwood, lying on his face, and a large quantity of blood by his side. They asked him how it happened, and he acknowledged that he had done it himself, and desired them to take him to some surgeon; he was taken to Brixton and the surgeon recommended him to be brought immediately to Guy's hospital; when brought in he looked very pale, but was quite sensible; yet he would answer very few questions.—The wound reached from a little beyond the extremity of the cornu of the os hyoides on one side, was continued across the neck in a curved direction downwards, and brought up on the other side to just the same point of the os hyoides. The wound was four inches in extent, it exposed the upper part of the thyroid cartilage and the pomum adami, the broad ligament connecting the os hyoides to the thyroid cartilage was also exposed, and through it was a small opening into the larynx, and the air came freely out at each expiration. In the upper part of the wound on the left side hung a part of the submaxillary gland, which was almost severed from the other part of the gland. He must have made several cuts after the large semicircular incision, as he had detached the integuments upwards and forwards, toward the chin, and had partly divided the anterior belly of the digastricus. The insertions of the omo-hyoidei were distinctly seen. The parts were carefully washed and freed from the hard coagula, which had formed on the edges of the wound, and were brought together by three sutures, and by straps of adhesive plaster between them; a broad piece of adhesive plaster was put across the neck below the wound, and its end carried upwards, which effectually supported the integuments. A thin roller was lightly carried over the whole.—He has been very feverish within the last day or two, and has had also a slight cough.—He has taken some saline medicine, and house physic.

The other accidents admitted this week are, a dislocation of

the humerus into the axilla; this case was well marked by the flattening of the shoulder, by the lengthening of the arm, the elbow carried from the side, and by the head of the bone being felt when the arm was raised towards a right angle with the trunk. It was easily reduced by taking hold of the hand and making extension, and by lifting the head of the bone, by placing the heel in the axilla. A fracture of the ulna—a contusion of the ancle—an injury to the scalp—a scald—a fracture of the clavicle.

No operations have been perperformed here this week.

ST. THOMAS'S HOSPITAL.

We give here a short sketch of the case of B. R. in Ann's ward, with the dissection of the amputated limb, and the state of the patient after the operation. She is 32 years of age, of a fair complexion, and scrofulous habit; she was admitted, June 17th, into Ann's for the purpose of having the lower extremity of the left side amputated. She states, that eight years since she received a blow on her knee by the falling of a door which she was endeavouring to take down; that her knee swelled very much, and was so painful that she could not walk; soon after this she came into St. Thomas's hospital, under the care of Mr. CHANDLER, and leeches were frequently applied to the knee, also cold applications, then blisters, and lastly, issues were made; but all to no purpose, the swelling was very little reduced at the end of six weeks, and she left the hospital just as lame as when she came in. It was proposed to amputate, but to this she very properly objected. She has since been under the care of various surgeons in her neighbourhood; but the lameness and pain have been gradually increasing. She lived in or near Spitalfields most of this time, undoubtedly a very bad situation for a person of her description. About three months since an abscess burst about four inches below the head of the tibia, and in a month after another; she could walk only on crutches, and then only a very short distance. She had a short cough and expectorated copiously, occasionally streaked with blood; she could get no sleep at night, and had no appetite, but was always very thirsty. This was just her state a little before she came into the hospital; she appeared very much emaciated, and complained of great pain in her knee, and the slightest movement of it made her shriek from the severe pain it occasioned. The openings before mentioned were observed below the joint and sinuses, leading from the openings into it. The knee was also partially dislocated forwards, evidently pointing out that an ulceration of the ligaments and cartilages had taken place. On asking her why she had stayed so long away from an hospital? she said it was the dread of having the limb amputated, and that it had been on

her mind since the time Mr. CHANDLER first proposed it.—She took a little aperient medicine after her admission, and some little sedative to allay the irritable state of the system, and on the 25th Mr. TRAVERS performed the operation. She had no sleep the night after the operation, complained of violent twitchings of the stump, and had frequent vomitings.—Mr. T. ordered her gt. viij. liq. opii sedativ. to be taken at bed time; but, owing to the mistake or negligence of the nurse, this was not given.

26th. She has vomited frequently throughout the day—complains much of her head—pulse quick, and weak—was ordered the effervescing mixture, to be taken every four hours; this was immediately rejected, and nothing could be kept on her stomach for the day.

27th. Found that she had a little better night, and the sickness had not returned during the night—slept about two or three hours altogether—was sick again this morning—ordered some castor oil, which operated towards the afternoon—has been a little more tranquil since.

28.—The vomiting has not returned; had a better night than the former one, the stump was examined to day partially, and appeared very healthy, there was no erysipelatous inflammation about it and the edges appeared in good apposition, very little discharge from the stump.

29.—Slept soundly last night, feels much more comfortable to day than she has since the operation; bowels have again been gently acted on by castor oil.—Pulse slower, about eighty, and tongue moist, she takes beef tea, oranges, and little else. If any alteration should take place we will communicate it.

Dissection of the parts.—A longitudinal incision was made on the joint by the side of the patella down to the capsular ligament, a part of which only remained, the cartilages covering the head of the tibia and the condyles of the femur were completely ulcerated; the cancellated structure of both bones was also eroded and presented a great many ragged, uneven surfaces, with little spiculæ projecting, but the whole enveloped in a grumous bloody matter. The posterior crucial ligament was the only peculiar ligament of this joint that remained. The patella was anchylosed at its edges with the condyles of the femur, and its centre internally presented just the same appearance as the other bones. There was a collection of matter in the most depending part of the ham which on being pressed, passed through the lower sinus before mentioned and partly passed into the joint.

The *Operations* performed this week, are the injection of an hydrocele; and the closing of the ala nasi of the right side, by Mr. GREEN. The cartilage had sometime since ulcerated from syphilitic inflammation attacking the part, and left a large opening. Mr. G. pared off the callous edges with a bistoury, and brought the parts together by two sutures and adhesive plaster. A partial adhesion has taken place. The operation was very like that performed

for hare-lip. Also the extraction of a hard cataract, and the amputation already spoken of, by Mr. TRAVERS. And here we cannot compliment Mr. T. on the manner in which the operation was performed; and we are satisfied that the same impression was made on the minds of the greater number of persons present. There appeared to have been no determinate rule observed in its performance; no precise plan followed in the division of the parts; there were portions of muscle to be divided after the knife had described the usual circles about the limb, and after all the patchings and polishings, a ragged stump could only be produced. The bone was divided with short strokes of the saw, interrupted now and then by a catch, and we think we saw a splintered portion fly off with the last stroke of it. This, of course, was the fault of the *assistant* holding the limb,—never any blame attaches to the surgeon in these cases! The dresser also partook of the bungling, in fixing the tourniquet, as there was twice, a jet of arterial blood from the stump, and twice was heard that disagreeable caution during the performance of operations, "Screw up the tourniquet." Ligatures were applied and the stump secured in the usual way. Very few accidents have been admitted this week, and these not of much importance. They are a lacerated wound of the muscles of the forepart of the leg; a severe contusion of the thigh, from a fall from a ladder; a sprain of the ancle joint; and another contused thigh from a blow by a brickbat.

MIDDLESEX HOSPITAL.

Thursday, June 10th.—George Woolfrey, a healthy lad, æt. 12, was brought here about eight o'clock this evening, in a state of insensibility, from the kick of a horse; his pulse at this period was 50 and weak, his respiration was oppressed but not sterterous, and his pupils were dilated, but not insensible to light, there was a slight convulsive motion of the muscles, of the face, at this period the eyes were turned upwards and the mouth drawn towards the right side. Upon examination it was found that the scalp had been divided about two inches and a half in length, just over and in the direction of the superciliary ridge on the right side, under which the frontal bone was fractured or stove in, and depressed in the shape of a circular spindle, or oval; the long diameter of which measured about an inch and a half, and the shorter about three-quarters of an inch, and upon looking at it, as depressed by the accident, it presented an appearance similar to the concave part of a dessert spoon, from which it did not differ much in size. For the purpose of more minutely examining the nature and extent of the injury, and removing the insulated portions of bone, an incision was made upwards, through the scalp (which had previously been separated from the cranium by the accident), in the centre of, and at right angles with its original laceration or accidental division. A small branch of the temporal artery was divided by this process, which gave out its blood freely at first, but was speedily stopped by compression between the thumb

and finger of the dresser, and another and larger branch, appeared to have been divided by the original laceration, by these means several ounces of blood were lost. The depressed portions of bone, of which there were three, were then removed by the elevator and forceps, during which there was considerable hemorrhage apparently from the minute vessels of the pericranium, and from the bone itself. Upon looking at the dura mater it did not appear to have sustained any injury, the pulsation through it was, however, very evident and strong, and seemed to force the membrane against the rough edges of the fractured bone, with considerable force, sufficient to endanger its abrasion in process of time. Some oiled lint was now placed on the dura mater, the extended wound dressed in the same way and the whole secured by a bandage, and ordered to be kept cool with the lotion of acetated ammonia.

For some time previous to the operation, he had regained the almost entire possession of his mental faculties, and during the process of extracting the fractured portions of bone, he spoke rationally enough, and complained of his not being able to breathe, "and that we were applying leeches to his head, for he felt them bite."

V. S. ad. ℥ viii

June 11th.—Last night he had a dose of calomel, and some house medicine afterwards, which he vomited. He has passed a good night, and this morning appears to be very comfortable. His pulse is 100 jerking and full. His bowels have not been open. His skin is rather hot and dry. His tongue is clean, and he is perfectly sensible. Some disposition to sleep during the day.

℞ *Liq. Ammoniæ Acetat.* ℥iv
Misturæ Camphoræ ℥j
Vini Antimonii Tart.m xx *ft.*
Haustus ter die sumendus.

June 12th.—Passed a good night, pulse 100 full, tongue a little furred, skin rather hot and dry. He complains of pain in both eyes, and on the palpebræ of the right there is a blush of inflammation. His bowels have not been open since the accident. Some house medicine has been given him and an enema, by which the intestines have been well emptied. Same treatment; draughts, and cold applications to the head.

June 13th.—Pulse about a hundred, full, tongue rather loaded of a whitish colour, skin hot and dry, sensorial powers not affected. Adhesion has taken place between the edges of the scalp divided by the operation. The wound by the accident looks well.

June 14th.—Much the same as yesterday, pulse 126 wiry, sensorium not impaired, bowels open, tongue cleaner, skin more natural.

June 15th.—No particular alteration.

June 16th.—Pulse 84 and rather full, tongue clean, and skin of the healthy temperature, bowels open. The wound looks well and discharges a small quantity of good pus. His sleep is natural and refreshing. The state of the dura mater could not be ascertained, on account of the adhesion already alluded to. Same medicines continued.

June 17th.—Pulse 80 softer, tongue clean, skin natural, bowels not open to day. The wound

looks well, and discharges healthy pus.

June 18th.—Pulse soft and natural, tongue clean. Has regular stools.

June 20th.—Wound looks well and healthy, granulations are forming in it, for which purpose a sufficient quantity of good pus is elaborated.

June 22nd.—His bowels are regular, his appetite good although he is necessarily kept low. The wound looks extremely well. His tongue is clean. His sleep natural and refreshing.

June 23rd.—To-day he says he is not quite so well, and complains of occasional pains in the head, shooting from the seat of the injury towards the occiput. His bowels have not been open since yesterday. His tongue is clean. His pulse 90 and weak, skin natural. Some aperient medicine has been given him, and the cold applications to the head continued.

June 24th.—Pulse 80 weak, tongue clean, skin natural. Has at present a disquieting head-ache with throbbing of the temples, and pain extending towards the occiput increased in the recumbent position. His bowels have been well opened. Same medicines continued. The wound has a healthy appearance.

June 25th.—Pulse 84 weak, tongue clean, skin natural. Has less pain in the head, wound looks well.

June 27th.—Pulse 56 weak, tongue furred, bowels open to-day, skin natural. He has still a disquieting head-ache, though somewhat less so than yesterday. He enjoys very little rest, and has no appetite for food. No alteration has been made in his medicines.

June 28th.—No alteration to-day.

June 29th.—Pulse 64 and fuller, tongue clean, skin natural, bowels open to-day. Has less pain in the head, and says he is much better.

DOCTOR MARTIN WALL.

This gentleman, whose death was noticed in our last, was formerly a Fellow of New College, and took his degree of A. M. in 1771, and D. M. in 1777. In 1785, on the death of Dr. PARSONS, he was elected Clinical Professor; his competitor was Dr. W. VIVIAN, of Corpus Christi, Regius Professor of Medicine.

The fund for the foundation of this professorship, was left by will of the Earl of Lichfield, Chancellor of the University, who died in 1772. The professor is elected by the Members of the Convocation, and no person is eligible who shall not have taken a doctor's degree in medicine, five years at least before his election.

Dr. Wall has published: The Medical Tracts of Dr. Foro Wall (his father), collected with the Author's Life, 8vo. 1780; Dissertations on Select Subjects in Chemistry and Medicine, 8vo. 1783; Clinical Observations on the use of Opium in slow Fevers, 8vo. 1786; Malvern Waters, being a republication of Cases formerly collected by his father, and since illustrated by his son, 8vo. 1806. He also wrote some curious papers in the Transactions of the Manchester Literary Society. The father of Dr. Wall was a very eminent practitioner at Worcester,

and celebrated both as a painter and a physician.—*Globe and Traveller.*

QUACKERY *alias* SWINDLING.

A fellow of the name of *Munsteall*, who for some time past has been flourishing not an hundred miles from Liverpool, in the character of a Medical Practitioner, and as a Member of the Royal College of Surgeons, in London, has lately deemed it prudent to remove to this Metropolis, and has taken up his residence in the neighbourhood of Cavendish-square. We consider it our duty to caution all persons against having any transactions with this worthless impostor. He has duped and ruined hundreds in the North, and we suspect that it is his intention to be guilty of similar atrocities here. We, however, will frustrate his intention, by exposing to the world, the real character of the nefarious scoundrel; and in doing which, though we shall execute a most irksome task, yet we are confident it will prove of great public service.

Report of the Clonmel Fever Hospital from the 20th May to the 20th June, 1824.

Remained last Report . .	34
Since admitted	36
Total	70
Discharged cured, . . .	30
Died, ...	2
Under treatment	38
Total, ...	70

MEDICAL PROMOTIONS.

DATED JUNE 17, 1824.

90th Foot—Assistant-Surgeon Luke Whitney, from 85th foot, to be Surgeon, vice Morrison, deceased.

97th Ditto—Surgeon Thos. Conolly, from half-pay 5th West Indian Regiment, to be Surgeon.

99th Ditto—Surgeon John Gray Hibbert, from half-pay York Light Infantry Volunteers, to be Surgeon.

Rifle Brigade—Assistant-Surgeon J. Armstrong, from half-pay of the Regiment, to be Assistant-Surgeon, vice Alexander Campbell, who exchanges.

HOSPITAL STAFF.

To be Assistant-Surgeons to the Forces.

Assistant-Surgeon William Dawson, M.D., from half-pay Canadian Fencibles, vice Clifford, exchanged to half-pay. Dated 4th April.

Hospital-Assistant James Rowland Morgan. Dated 25th June, 1824.

Assistant-Surgeon Hugh Caldwell, from half-pay 31st Foot, vice Hospital-Assistant Lomond, appointed to 60th Foot. Dated 25th June, 1824.

To be Hospital-Assistants.

Hospital-Assistant John Blackwood, from half-pay, vice Farmer, who exchanges. Dated 25th June, 1824.

CAMBRIDGE UNIVERSITY PROMOTIONS.

Batchelors in Physic.—George Shaw, of Caius, and Henry S. Roots, of Jesus.

To be Licentiate in Physic.—E. Lambert, of Pembroke Hall.

Dr. Badham, of Oxford, physician of Kensington, was admitted *ad eundem* of this university.

CERTIFICATE.

B. Bannister, Southend, Essex, druggist.

PARTNERSHIPS DISSOLVED.

J. Fitch and W. Chambers, Norwich, chemists.—W. Sweeting and J. Newport, Wells, Somerset, surgeons.—J. Rymer and E. Manly, Dean-street, Soho, surgeons.

BIRTHS.

At Newmarket on Fengus, the lady of Dr. Frazer, of a son.

MARRIED.

On Monday, Mr. Robert Sewell, druggist, Sheffield, to Miss Elizabeth Brown, of the same place.

At Cambridge, Mr. Souther, surgeon, of London, to Martha, youngest daughter of Mr. Hatfield, of Huntingdon.

At Londonderry, T. E. Miller, Esq. M.D. to Frances, daughter of William Scott, Esq. M.D. both of that City.

In Scotland, Philip Anglin, Esq. M.D. of Jamaica, to Catherine Margaret, eldest daughter of the late Colonel John Robertson.

DIED.

At Ballygowan, Ireland, Surgeon J. Rainey, R.N.

At Callan, in his 66th year, Dr. Cumming.

At Cork, Ellen, wife of Mr. R. Fowler, apothecary.

Killed at Sierra Leone, Dr. Beresford Tedlie, 2d West India regiment.

On Wednesday, at Castle Cary, Edward Russ, Esq. surgeon.

At Brecon, Wm. Williams, Esq. surgeon, in his 90th year.

In Virginia, 23d April last, Dr. James Murray Brown.

At Belfast, the eminent Dr. Brennan, in the prime of life.

NOTICE TO CORRESPONDENTS.

The Title-page and Index to the Third Volume will be given in our next number.—The Third Volume, price 7s. 6d. in boards, may be had at the Publishers.

Incessant applications are made to the Publishers for the Title-page and Index to the second Volume; and at which the Editor feels much surprised, as they were stitched to No. I. of Vol. III. and therefore it would appear that the omission arises from some irregularity on the part of those persons by whom "THE LANCET" is sold. Those Gentlemen, however, who are still in want of the title-page and index to the second Volume shall receive them on application to "THE LANCET" office. All the back numbers are being reprinted, and Subscribers will be enabled to complete their sets shortly.

We wrote a letter to W. W. and directed as he requested. We were much surprised at not receiving his answer; but the silence of W. W. was, during the last week explained by the letter having been sent back to us from the "Returned Letter Office." There must have been an error in the address sent to us by W. W.

Zoilus shall appear next week.

Other Correspondents shall be noticed in our next.

ERRATUM.

In a part of our impression last week, page 395, for "such a *small* proportion," read "such a proportion."

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